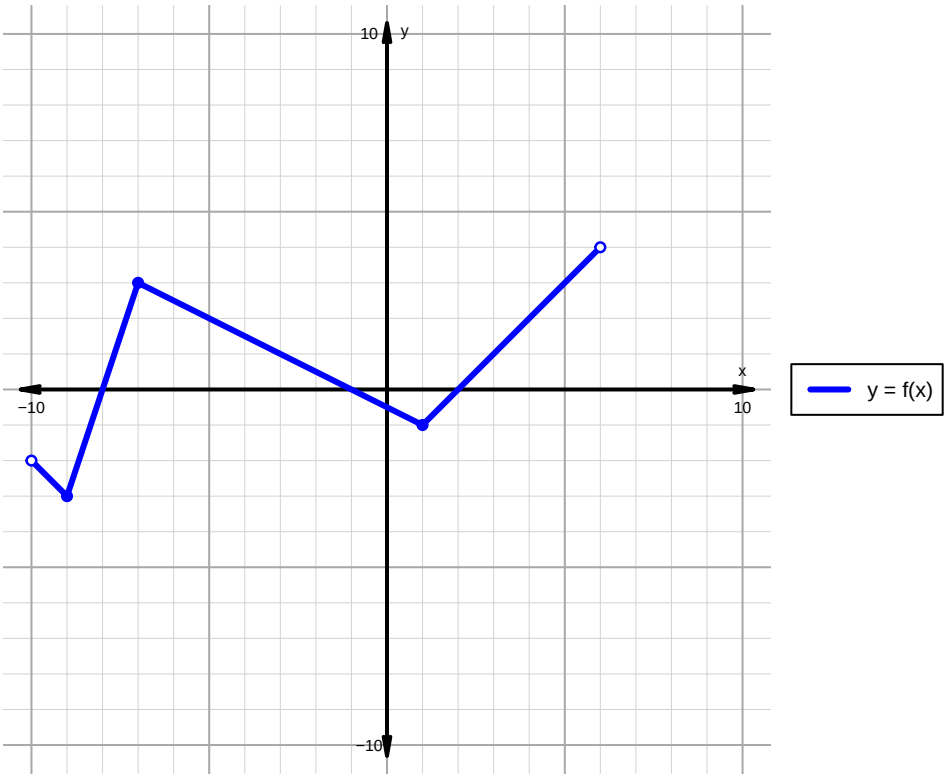
Name: Date:

Intervals, Transformations, and Slope Solution (version 29)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-1)\cup(2,6)$
Negative	$(-10,-8)\cup(-1,2)$
Increasing	$(-9,-7)\cup(1,6)$
Decreasing	$(-10,-9)\cup(-7,1)$
Domain	$(-10,6)$
Range	$(-3,4)$

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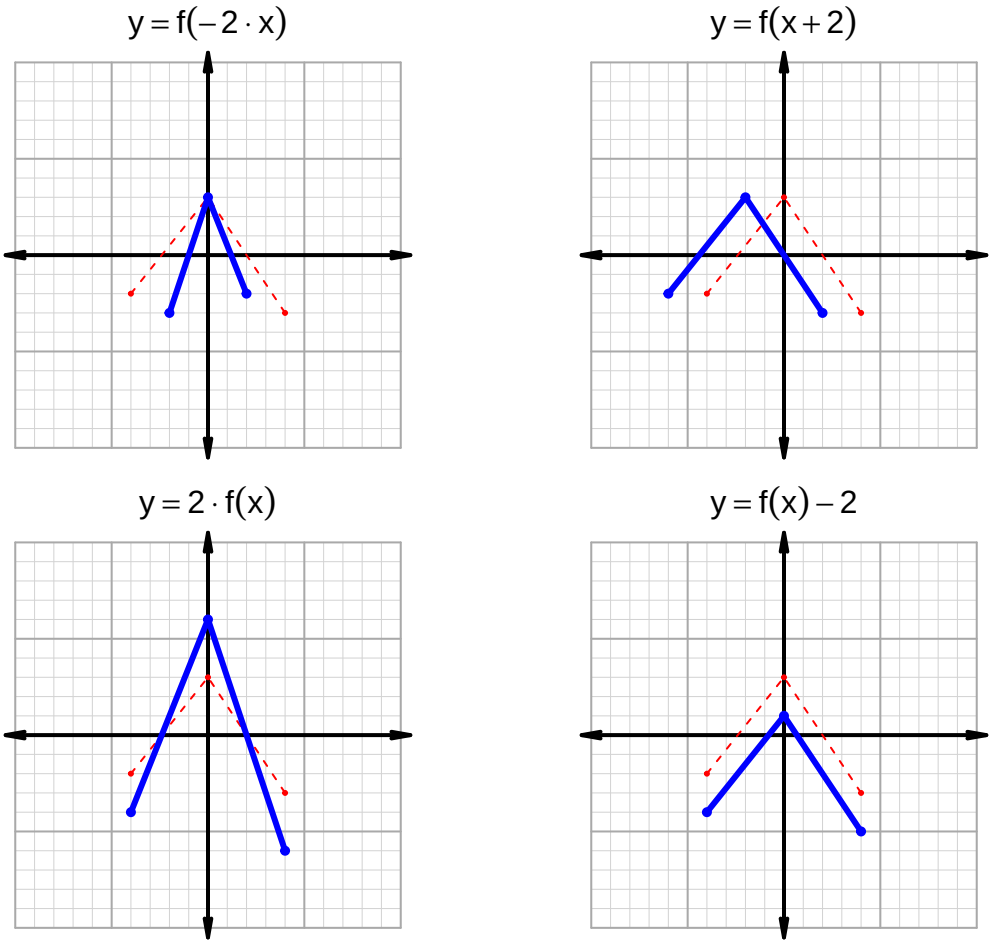
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 29$ and $x_2 = 57$. Express your answer as a reduced fraction.

x	$g(x)$
14	29
29	77
57	14
77	57

$\frac{g(57)-g(29)}{57-29} = \frac{14-77}{57-29} = \frac{-63}{28}$

The greatest common factor of -63 and 28 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{4}$$